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Alternative prevention of infectious diseases

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Infectious microorganisms are traditionally subdivided into normal, pathogenic, and opportunistic. This classification disregards that sometimes normal microorganisms cause diseases, or pathogenic microorganisms coexist with a healthy carrier. In other words, all microorganisms in a host body are opportunistic pathogens. This is not the only similarity between "normal" and "pathogenic" microfloras. In essence, there is no fundamental difference between them: both are infectious, and both may either cause diseases or persist in healthy carriers. Normal microflora is the most infectious: it infects all representatives of the host species soon after birth. This is literally an endless epidemic. In historical perspective, cholera and plague epidemics are no rivals to normal microflora as regards the number of victims. Normal microflora is infectious because the host body needs it; i.e., its infectiousness is an active property of the host: we infect ourselves with what we need. Now since "normal" and "pathogenic" microfloras are essentially similar in pathogenicity, infectiousness, and the healthy carrier state, it is conceivable that the susceptibility to "pathogenic" infectious microflora is also active. The infectiousness of pathological prions is strong evidence for active susceptibility [1]. Passive susceptibility, however, does exist; examples are the susceptibility to tetanus, botulism, and gas gangrene. The host body does not actively "attract" their pathogens; it is merely an accidental nutrient medium for them; hence, these infectious are not contagious. It should be emphasized that active susceptibility is due to the host's demand for the products of certain microorganisms' genes rather than the needs of the microorganisms themselves. This clearly shows the prospects for alternative prevention of infectious diseases: transplantation of the required microbial genes into the genome of the susceptible species should result in natural insusceptibility to the microorganism that normally carries them. An application for the patent on this approach [2] has been published by WIPO.

1. A.P.Malyshkin. Infection: A Hypothesis on Active Susceptibility and Species Immunity with Implications for AIDS Prevention. J. Immunobiology, 215 (2010), 894–897

2. A.P.Malyshkin. Method for prevention of infectious diseases of plants, animals and humans. WO2011084090

Biography

Alexander P. Malyshkin, male, microbiologist, graduated from Orenburg State Medical Academy in 1979 and worked for this academy as a researcher. After defending his Candidate of Science (Med.) dissertation (PhD thesis), he headed the Division of Laboratory Diagnosis of Orenburg Regional Tuberculosis Dispensary for some time. Dr. Malyshkin's field of research includes microbiology, immunology, and issues of infectious diseases and their prevention. He is the author of the active susceptibility hypothesis and a fundamentally new approach to the prevention of infectious diseases of plants, animals, and humans (including the HIV infection) based on it. The main recent work (now in press) is the chapter on the prevention of infectious diseases in the book Aquatic Plants and Plant Diseases (to be published by Nova Science). Dr. Malyshkin is exploring the possibility of collaboration in further developing and implementing his novel approach to disease prevention, which could be used, in particular, for breeding infection-resistant animal and plant varieties.

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